WHAT EXPLAINS THE MARKET REACTION TO DIVESTITURE
announcements?

JUSTIN R LAL, Analyst, Goldman Sachs and Graduate Student, Finance Discipline Group, University of Technology, Sydney
PASCAL NGUYEN, Senior Lecturer, Finance Discipline Group, University of Technology, Sydney
NAHID RAHMAN, Lecturer, Finance Discipline Group, University of Technology, Sydney

We show that announcements of divestitures by Australian firms induce a significant increase in shareholder value. While the extent of the market reaction depends on the relative size of the divested asset, high leverage and poor operating performance do not appear to generate higher returns. The application of quantile regressions reveals a high degree of asymmetry in the market reaction. We also find that increased focus through the divestiture of non-core assets is no longer associated with higher returns.[1]

Divestitures represent a potent form of corporate restructuring. Firms can use divestitures together with acquisitions to reshuffle their portfolio of assets. Business units generating poor returns may be sold to more efficient producers (Maksimovic and Phillips 2001). In addition, divestitures allow firms to trim their production capacity following a negative demand shock (Warusawitharana 2008). As other producers may be able to extract a higher value from the assets because of better fit or greater economies of scale, divestitures ensure that economic resources are put to their best use (Hearth and Zaima 1984; Hite et al. 1987). In effect, divestitures contribute to more efficient capital allocation. Under certain conditions, firms may also find that it is cheaper to divest assets for the purpose of raising funds instead of issuing equity (Lang et al. 1995). Altogether, the above arguments suggest that divestiture announcements should be associated with a significant increase in the seller's share price.

In this paper, we analyse the market reaction to divestiture announcements made by Australian firms listed on the ASX over the period from 1990 to 2010. Most studies deal with US firms. In their review paper, Eckbo and Thorburn (2008) indicate that sellers experience positive abnormal returns of 1.2 per cent on average. The market reaction is usually stronger for highly leveraged firms since the funds raised through divestitures enable the sellers to reduce their cost of financial distress (Lang et al. 1995). Poor operating performance is also associated with higher abnormal returns. In addition, John and Ofek (1995) highlight the fact that divestitures leading to greater focus generate significantly higher returns and improved operating performance.

In Australia, Cooney et al. (2004) report positive excess returns for a sample of divestitures announced in the 1990s. However, only the divestitures of non-core assets appear to generate significant returns. In the multivariate regressions, none of the firm characteristics is found to be significant. We extend their study to the past 10 years using a comprehensive sample sourced from Thomson Reuters' SDC Platinum. Our second contribution comes from the application of quantile regressions to differentiate the influence of the explanatory variables at different points in the distribution of excess returns. Unlike ordinary least-squares, quantile regressions are robust to outliers and allow for the possibility that the effect of the explanatory variables differs systematically with the size of the dependent variable. More subtle relationships can thus be revealed.[2]

Our results show that divesting firms achieve abnormal returns of about 1.8 per cent in the three-day period surrounding the announcement. High leverage and low operating performance only contribute to higher returns when the market reacts favourably to the divestiture. On the other hand, the influence of these variables is insignificant when the market reacts negatively. In any case, the divestitures of non-core assets are not associated with higher returns, contrary to results reported in the past.

Methodology and sample description
We use standard event study methodology to compute abnormal returns (Brown and Warner 1985). The stock returns of divesting firms around the announcement are adjusted for broader market movements using the market model. In line with Cooney et al. (2004) we use the All Ordinaries Index

as a proxy for the market portfolio. The coefficients of the market model are estimated over the period (-250, -10) days before the announcement. Abnormal returns are given by the difference between realised and expected returns in the 11-day window around the announcement date. The value generated by the divestiture is measured by the seller's cumulated abnormal returns over a three-day window.

The explanatory variables consist of the divesting firm's leverage, operating performance and expected change in focus. Leverage is proxied by total liability over total assets. Highly leveraged firms are likely to suffer from high distress costs. In particular, they may have to pass up potentially valuable projects due to a prohibitive cost of capital or the inability to raise external funds (Myers and Majluf 1984). Operating performance is measured by operating profits before tax over total assets. Poor performers are more likely to improve their performance since divestitures help resolve overcapacity and sort out unproductive investments (Maksimovic and Phillips 2001; Warusawitharana 2008). This variable is thus expected to have a negative influence on abnormal returns. Our proxy for change in focus is whether the divested unit operates in a different industry compared to the firm's main business. John and Ofek (1995) demonstrate that increased focus is associated with improved operating performance and higher abnormal returns. Cooney et al. (2004) confirm that only this type of divestiture leads to higher share prices in Australia.

In the regression analysis, we include the relative size of the divestiture measured by the value of the divested asset over the seller's total assets. Large divestitures are expected to have a greater impact on the firm's market value of equity than small transactions. For instance, Mulherin and Boone (2000), Alexandrou and Sundarsanam (2001) and Hanson and Song (2006) find significantly higher excess returns for larger divestitures. In the same vein, John and Ofek (1995) show that the market reaction is a decreasing function of the firm's market value.

Our data source is Thomson Reuters' SDC Platinum. We select all divestitures by Australian firms announced between January 1990 and December 2010. Following previous studies, firms in the financial services sector (SIC 6000-6999) are excluded. To obtain more reliable results, we require the divestiture to be worth at least $10 million and the seller to have more than $50 million in total assets. In comparison, John and Ofek (1995) select divestitures worth more than $100 million. We then collect daily stock prices around the announcement date using Datastream. After dropping observations with incomplete data, our final sample is represented by a total of 402 divestitures.

Table 1 indicates that the average divestiture in the sample is valued at about $190 million. However, the result is highly skewed by the presence of a few large transactions. The largest divestiture is the sale of Origin Energy's coal seam gas division to US-based Conoco Phillips for over $9.7 billion in 2008. Otherwise, half of the transactions are worth less than $50 million. About 78 per cent of the divested assets operate outside the seller's main business segment. Their relative size is small with a median value representing only 3.1 per cent of the seller's assets.

Divesting firms are generally large with an average of $6.5 billion in total assets. Their leverage is also relatively high with total liability representing about 55 per cent of total assets. Operating performance appears to be relatively low with an average return on assets of about 3.6 per cent. Furthermore, the magnitude of the standard deviation suggests that a significant proportion of firms have a negative operating performance. Hence, a number of divestitures in our sample may be driven by financial distress.

Empirical results

Our first step is to evaluate whether divestitures create value for the seller. Table 2 shows the abnormal returns in the 11-day window around the announcement date. Most of the returns are

TABLE 1: Summary statistics for divestiture sample

	MEAN	STD DEV	Q1	MEDIAN	Q3
Panel A: Divestiture characteristics					
Value (A$ million)	191.0	679.4	19.6	49.1	130.0
Relative size	0.173	0.727	0.009	0.031	0.133
Non-core asset	0.779	0.416	1	1	1
Panel B: Divesting firm characteristics					
Assets (A$ million)	6,530	13,139	479	2,200	6,697
Leverage	0.550	0.155	0.480	0.553	0.629
ROA	0.036	0.120	0.016	0.055	0.091
Herfindahl	0.572	0.283	0.325	0.509	0.820
N segments	5.799	3.714	3	5	8

Notes: Relative size is with respect to the seller's total assets. Non-core indicates that the divested asset is outside the seller's main business segment. Leverage is total liability over total assets. ROA is operating profits before tax over total assets. The Herfindahl index is calculated using segment sales. The number of business segments is based on four-digit SIC codes.

TABLE 2: Estimates of abnormal returns around divestiture announcement

DAY	AVERAGE	PROPORTION > 0
Panel A: Abnormal returns		
$t - 5$	-0.217*	0.4776
$t - 4$	-0.101	0.4652
$t - 3$	-0.158	0.4826
$t - 2$	-0.161	0.4851
$t - 1$	0.106	0.4527
t	0.837***	0.5597***
$t + 1$	0.873***	0.5348**
$t + 2$	-0.008	0.4776
$t + 3$	-0.246	0.4577
$t + 4$	0.143	0.4776
$t + 5$	-0.117	0.4701*
Panel B: Cumulated abnormal returns		
CAR -1,0	0.943***	0.5373**
CAR -1,+1	1.816***	0.5721***
CAR -5,+5	0.952*	0.5174*

Notes: Abnormal returns are estimated using the market model. Significance is based on the t-test for abnormal returns and the Wilcoxon signed test for the proportion of positive returns.

TABLE 3: Determinants of excess returns

DEPENDENT VARIABLE IS CAR -1,+1				
		QUANTILE REGRESSIONS		
	OLS	Median	25th	75th
Intercept	0.0309	0.0029	-0.0236***	0.0232**
	(1.49)	(0.48)	(-2.71)	(2.17)
Relative size	0.007***	0.0042***	0.0005	0.0096***
	(3.48)	(5.08)	(0.40)	(6.21)
Leverage	0.0297	0.0255***	0.0088	0.0841***
	(1.07)	(2.63)	(0.66)	(4.99)
ROA	-0.1112	0.0047	0.0245	-0.0897***
	(-1.63)	(0.37)	(1.45)	(-3.76)
Non-core	-0.0008	0.0034	0.0082	0.0082
	(-0.07)	(0.94)	(1.58)	(1.31)
R^2 | Pseudo R^2	0.0621	0.0165	0.0059	0.0717

Notes: A natural log transformation is applied to relative size.
T-statistics are indicated between brackets. ***, **, * indicate significance at the 1%, 5% and 10% level.

insignificant, except on the day of the announcement and the following day. Over a short three-day window, cumulated abnormal returns amount to about 1.8 per cent. Cooney et al. (2004) report a similar result in Australia for an earlier period. The proportion of positive abnormal returns is also significantly higher on the announcement day and the following day. This confirms the perception that shareholders tend to benefit from divestitures. However, the results also indicate that not all divestitures elicit a positive market reaction. In fact, more than four divestitures out of 10 are associated with negative cumulated returns.

Our next step is to identify which divestitures create more value. Table 3 includes the results of four regressions involving the same explanatory variables. The ordinary least-squares regression shows that larger divestitures tend to have a greater impact on the seller's value. However, the influence of leverage and operating performance is not statistically significant. This seems surprising given that divestitures provide firms with fresh cash that can help them pay their debts and reduce the costs of financial distress. In addition, divestitures circumvent the need to issue new equity and dilute historical shareholders. Similarly, despite the fact that the divestiture would increase the firm's focus by removing an asset unrelated to its core business, it is not associated with higher returns.

The median regression may provide a different outcome. In contrast to ordinary least-squares where deviations from the mean are squared, the slopes are estimated using the absolute deviation from the median for each of the explanatory variables. Therefore, outliers have a smaller influence compared to ordinary least-squares.

The most notable finding is that leverage becomes statistically significant although the coefficient is slightly smaller. The influence of leverage is highlighted in the recent turmoil experienced by Fortescue (FMG). Pressed to streamline its highly geared balance sheet, Australia's third-largest iron ore miner saw its share price rocket when it announced it had concluded a series of asset sales. There appear to have been two factors motivating the buoyant market reaction to the divestiture. First, the company would not disrupt its ongoing development for lack of cash. Second, the divestiture dispelled the prospect of a prohibitive equity issue in order to make up for a looming cash shortfall.

The remaining columns report the results of two quantile regressions. The regression at the 25th quantile examines the effect of the explanatory variables around large negative abnormal returns. None of the variables is found to be significant. The large negative intercept reflects the fact that the focus of the regression is on the left tail of the excess returns distribution. Overall, the result implies that the negative market reaction is due to other factors. The identification of these factors is a subject for future research. In contrast, most of the variables are highly significant at the 75th quantile. This result shows that large positive abnormal returns tend to be well explained by the seller's characteristics. In particular, high leverage and low operating performance contribute to significantly higher abnormal returns. For instance, a 10 per cent increase in leverage is associated with a 0.84 per cent higher abnormal return. The effect of a 10 per cent decrease in return on assets (ROA) is close to 0.9 per cent. These impacts are economically large since 10 per cent variations are well within one standard deviation in either leverage or ROA.

Across all regressions, the fact that the divestiture is expected to increase the seller's focus by removing an asset outside its main business segment does not appear to trigger a significantly different market reaction. This result is in contrast with earlier findings by Cooney et al. (2004) for Australian firms and John and Ofek (1995) for US firms. A plausible explanation for the discrepancy is that firms used to be overdiversified. By eliminating negative synergies, refocusing divestitures were perceived in the past as creating value. Now that firms have become much more focused, reduction in diversification is no longer viewed as having the same positive effects.

Conclusion
In this paper, we provide robust evidence that divestitures create shareholder value. Excess returns over the three-day period surrounding the announcement are about 1.8 per cent. The extent of the market reaction clearly depends on the relative size of the divested asset. Larger divestitures induce

significantly higher returns. From the least-squares regression, high leverage and poor operating performance, which represent conventional motives to divest, do not appear to explain the cross-sectional difference in excess returns. However, this is due to a strong asymmetry in the market reaction. Large positive abnormal returns are significantly related to the leverage and performance of divesting firms, while large negative abnormal returns are explained by totally different factors that remain to be uncovered. Finally, we find that refocusing divestitures are not associated with higher returns contrary to the results found in earlier studies. ∎

Notes
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2. See Koenker and Hallock (2001) for an intuitive presentation of quantile regressions.

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